

Notice of Allowability

Application No.

10/801,947

Examiner

Irakli Kiknadze

Applicant(s)

MOSTAFAVI ET AL.

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed 8/28/2006.
2. ☒ The allowed claim(s) is/are 1-57.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 3/6/06; 3/15/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 28, 2006 has been entered.

Allowable Subject Matter

2. Claims 1-57 are allowed.

3. The following is an examiner's statement of reasons for allowance:

Claim 1 is allowed because prior art fails to teach or make obvious a method for collecting computed tomography (CT) image data, comprising: rotating a gantry to collect at least $M \times N$ sets of CT image data of at least a portion of a patient, wherein each set of the CT image data corresponds to a phase of a respiratory cycle, and wherein M is a determined number of respiratory cycle(s) and N is a determined number, greater than one, of intervals into which a respiratory cycle is to be divided, as

claimed including all of the limitations of the claim. Claims 1-16 are allowable by virtue of their dependence.

Claim 17 is allowed because prior art fails to teach or make obvious a computer readable medium having a set of stored instructions, the execution of which causes a process to be performed, the process comprising: rotating a gantry to collect at least $M \times N$ sets of CT image data of at least a portion of a patient, wherein each set of the CT image data corresponds to a phase of a respiratory cycle, and wherein M is a determined number of respiratory cycle(s) and N is a determined number, greater than one, of intervals into which a respiratory cycle is to be divided, as claimed including all of the limitations of the claim. Claims 18-32 are allowed by virtue of their dependence.

Claim 33 is allowed because prior art fails to teach or make obvious a system for collecting computed tomography (CT) image data, comprising: means for rotating a gantry to collect at least $M \times N$ sets of CT image data of at least a portion of a patient, wherein each set of the CT image data corresponds to a phase of a respiratory cycle, and wherein M is a determined number of respiratory cycle(s) and N is a determined number, greater than one, of intervals into which a respiratory cycle is to be divided, as claimed including all of the limitations of the claim. Claims 34-48 are allowed by virtue of their dependence.

Claim 49 is allowed because prior art fails to teach or make obvious a method for generating a computed tomography (CT) image, comprising: rotating a gantry at least N times to acquire image data of at least a part of the patient; and gathering image data acquired at a same phase of a breathing cycle, wherein N is a determined number,

greater than one, of intervals into which a breathing cycle is to be divided, as claimed including all of the limitations of the claim. Claims 50-51 are allowable by virtue of their dependence.

Claim 52 is allowed because prior art fails to teach or make obvious a computer readable medium having a set of stored instructions, the execution of which causes a process to be performed, the process comprising: rotating a gantry at least N times to acquire image data of at least a part of the patient; and gathering image data acquired at a same phase of a breathing cycle, wherein N is a determined number, greater than one, of intervals into which a breathing cycle is to be divided as claimed including all of the limitations of the claim. Claims 53 and 54 are allowable by virtue of their dependence.

Claim 55 is allowed because prior art fails to teach or make obvious a system for generating a computed tomography (CT) image, comprising: a processor for receiving an input representative of a number of intervals N into which a breathing cycle of the patient is to be divided, wherein the number of intervals N is greater than one; and a gantry rotation control for rotating a gantry at least N times to acquire image data of at least a part of the patient as claimed including all of the limitations of the claim. Claims 56 and 57 are allowable by virtue of their dependence.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

4. Applicant's arguments, see pages 10-12, filed June 7, 2006, with respect to claims 1-57 have been fully considered and are persuasive. The rejection of claims 1-54 has been withdrawn.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takagi et al. (US Patent 6,269,140 B1) teaches an X-ray computerized tomography apparatus and method comprising acquiring images depending on an output signal representing a cyclic movement of a part of a living body. Pan et al. (US Patent Application Publication 2004/0081269 A1) teaches a CT imaging system, wherein a respiratory cycle is divided into N substantially equal parts corresponding to a specific respiratory phase of the respiratory cycle.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Irakli Kiknadze
September 18, 2006.

IK

A handwritten signature in black ink, appearing to read 'Ed Glick', with a stylized flourish at the end.

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER